Virtual work integrated learning (VWIL) implementation for improving student professional development in a remote learning environment

Alicia Shih\textsuperscript{a}, Peter R. Neal\textsuperscript{a} and Sarah Grundy\textsuperscript{a}
School of Chemical Engineering, The University of New South Wales\textsuperscript{a}
Corresponding Author Email: s.grundy@unsw.edu.au

ABSTRACT

CONTEXT
To become an accredited engineer, Engineers Australia requires students to engage with professional practice outside of their educational institution. Unfortunately, disruptions caused by the Covid-19 pandemic have made it difficult for students to secure industrial placement and develop the required professional competencies, resulting in delayed graduations. The significant number of students impacted by pandemic restrictions has necessitated new approaches to integrating authentic learning practices into engineering courses to provide students with industry exposure. Among these approaches, VWIL activities have proved to be one of the most robust in a remote learning environment and while still achieving course learning outcomes.

PURPOSE OR GOAL
The purpose of this paper is to share learnings based on VWIL activity integration to improve engagement, student professional development and student experience study. The learnings include the development of the teaching and learning activities which constructive aligns with assessments in the course as well as reinforce threshold concepts taught in the courses.

APPROACH OR METHODOLOGY/METHODS
A 360° virtual site tour was developed to continue to support student professional development by providing industry exposure in an online learning environment. This VWIL activity was integrated into level 3 chemical engineering discipline-specific courses as part of tutorials that focus on relevant threshold concepts for the program. An anonymous survey was conducted with questions based on student’s reflection of using the VWIL activity.

ACTUAL OR ANTICIPATED OUTCOMES
The study will provide an understanding of how VWIL can be used to supplement student professional development. Virtual site visits and WIL teaching and learning activities will enable equitable learning for the cohort whether the students are geographically local or studying remotely. Lastly, the study has an opportunity to provide insights into best practices for integrating industry learning activities into tertiary engineering courses.

CONCLUSIONS
It was concluded that desktop site tours are a useful learning tool for chemical engineering students, with over 90% of students being satisfied with the module’s implementation. They can be easily integrated into tertiary study, and student feedback indicates the resource is useful for enhancing understanding of course and discipline outcomes. It is suggested for future iterations that virtual site tour modules include additional supplementary engineering material or prompts to increase student engagement with it.

KEYWORDS
Authentic learning, virtual work integrated learning, professional development.